

REMARKS

This Amendment is in response to the Office Action dated August 28, 2008 in which claims 1, 2, 4, 5, 7, and 8 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Klug (European Patent No. 1122227) in view of Whalen (U.S. Patent No. 5,824,250) and Auxier et al. (U.S. Patent No. 6,247,896). Claim 3 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Klug (European Patent No. 1122227) in view of Whalen (U.S. Patent No. 5,824,250) and Auxier et al. (U.S. Patent No. 6,247,896) and further in view of Simth-Johannsen (U.S. Patent No. 4,264,209). Claim 6 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Klug, in view of Whalen, Auxier et al., and further in view of Weaver (U.S. Patent No. 4,341,725). Claims 17, 18, 20, 21, and 23-26 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Klug, in view of Whalen, Auxier, and Campion (U.S. Patent No. 5,503,218). Claim 19 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Klug, in view of Whalen, Campion, and further in view of Smith-Johannsen. Claim 22 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Klug, in view of Whalen, Auxier, Campion, and further in view of Weaver. These rejections should be withdrawn.

First, neither Klug, Whalen, nor Auxier teach a method for producing gas turbine components with internal cavities with microcircuit dimensions such as those described by Auxier by casting a ceramic slurry of about 70% to about 90% by weight of particles having sizes of about 0.1 to 50 microns. This particle loading and size range is critical to form molds and cores that replicate the intricate passages described by Auxier.

Second, Klug mentions a particle size range that partially overlaps the above range but contains particles as large as 125 microns. These particles are too big to replicate the features of passages with cross-sectional areas of 0.0001 to 0.0006 in². (Auxier, claim 8).

Third, Klug in Example 1 (col. 1, line 35) teaches a slurry containing 51% liquid by volume. This is an unacceptable amount of liquid in a slurry used for the present invention. In addition, a much higher particle loading of about 70% to about 90% by weight is called for in claim 1 of the present invention to ensure success.

Fourth, neither Smith-Johannsen (U.S. Patent No. 4,246,209), Weaver (U.S. Patent No. 4,341,725), or Campion (U.S. Patent No. 5,503,218) teach the particle loading or size range specified in the current invention to produce the microcircuit features described in the Auxier invention.

Fifth, the comments on page 3, paragraph 0033 of the Office Action, noting that particles of about 300 mesh to 900 mesh would fall within the claimed range and that particles of about 200 mesh to 900 mesh would fall within the range disclosed by the instant specification is not correct. Particles of about 300 mesh (50 microns) to 900 mesh (18 microns) do not fall in the range disclosed by the specification. In addition, particles of about 200 mesh (75 microns) to 900 mesh (18 microns) also do not fall in the range disclosed by the specification. Claim 1 requires that 70% to 90% by weight of the slurry particles that are in a range of 0.1 to 50 microns. Larger particles than those specified in claim 1 would fail to replicate the features of the channels with microcircuit dimensions described by Auxier. Klug has no teaching that distribution of its particles, which are as large as 125 microns, would be predominately under 50 microns. There is no indication by Klug of what percentage of particles are 50 microns or smaller.

In light of the above, none of the references teach the particle loading and particle size distributions necessary to produce gas turbine components with internal cavities with microcircuit dimensions such as those described by Auxier in detailed in the present patent application.

CONCLUSION

This Amendment places the application in condition for allowance. Notice to that effect is requested.

Respectfully submitted,

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